

# Adoption of Improved Cassava Varieties by the Women Farmers in Akinyele Local Government area of Oyo State

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**Abstract**— The study investigates adoption of improved Cassava varieties by women in Akinleye Local Government area of Oyo State. 92 respondents were selected using multi stage sampling techniques. Data on sources of input used, adoption of cassava varieties and problem been faced in process of adoption of improved varieties were collected through structured interview schedule. The data was later analyzed using descriptive and inferential analysis. The findings revealed that most ( 29.3% ) of the respondents were between age 30 to 40 years, 27.3% of the respondents, had no formal education while 43.5% had 5 to 10 years' experience in cassava farming. The relationship between socio-economic characteristics such age, educational level, farm size, years of farming, labour and adoption level of respondent were determined using chi-square. Inferential statistics shows that there is no significant relationship between age, marital status, secondary occupation and adoption ( $P > 0.05$ ) while education, household size and adoption show significant relationship ( $P < 0.05$ ). It was observed that most women farmers are late adopters of improved cassava varieties developed by the research institutes in the country. It is recommended that women should liaise with research institute for proper information on current improved cassava varieties in the country.

**Keywords**— Level ,Adoption, Improved Cassava Varieties, Women Farmers, Akinleye LGA.

## I. INTRODUCTION

Cassava (*Manihot Esculenta*), also called yucca, Mogo, or manioc, is a woody shrub of the euphorbiaceous (spurge family) native to south America. (Akinwonmi and Andoh, 2013). It is extensively cultivated as an annual crop in tropical and sub-tropical regions. The oldest direct evidence of Cassava comes from a 1,400 years old Maya site Joya de cern, in El Salvador (Stone, 2002). World population of Cassava root was estimated to 184 million tons in 2002, rising to 230 million tons in 2008 (FAO, 2008). The majority of the production in 2002 was in Africa where 99.1 million tons were grown, 51.5 million were given in Asia and 33.2 million tons in Latin America and Caribbean. Nigeria is world largest producer of Cassava. however, based on the statistics from the FAO of the United Nations, Thailand is the largest exporting country of dried Cassava, with a total of 77% of world export in 2005 (Berrin and museum 2007). Cassava plays a particular important role in agriculture in developing countries especially in sub-Sahara Africa because it does well on poor

soils and with low rainfall, and because it is a perennial that can be harvested without allowing it to act as a famine reserve, and it also offers flexibility of resource-poor farmers because it serves as either a subsistence or a cash crop (Stone, 2002).

In Nigeria, Women farmers are into agriculture and most especially cassava farming starting from planting to harvesting, processing and production. Our women farmers are illiterate using crude tools for subsistence agriculture and old methods of planting, these are the prevailing conditions under which Cassava is planted in Nigeria, and processed as Garri (Berrin and museum, 2007). For success to be recorded in the area of cassava, there is need to carry women along in the adoption of improved cassava varieties, Although, Nigeria has released so many improved Cassava varieties that will boost production and keep the country in the lead of world's largest producer of the root crop. The varieties, which are products of about a decade old convectional breeding research include, NRO1/0004, CR41-10TMS01/0203 and TMS 00/0240 were bred by scientist

working at Ibadan-based International Institution of Tropical Agriculture (IITA), while NR 01/0004 and CR 41-10 were bred by Umudike-based National Root Crops Research Institute (NRCRI) and the Columbian-based International Center for Tropical Agriculture (CIAT) respectively (Akoroda and Teri, 2004).

The input and effort of women in Cassava production is the major reason for the improvement in the production of the crop in the country. The hard labour of women which contributed to the general acceptability of the crop in the area of domestic uses and industrialization usage are the main reason of our rating in the world as the one of the major producer of the crop in the world. Against this background, the study ascertained adoption of improved cassava varieties by the women farmers in Akinyele local Government of Oyo State. TMS01/0203 and TMS 00/0240 were bred by scientist working at Ibadan-based International Institution of Tropical Agriculture (IITA), while NR 01/0004 and CR 41-10 were bred by Umudike-based National Root Crops Research Institute (NRCRI) and the Columbian-based International Center for Tropical Agriculture (CIAT) respectively (Akoroda and Teri, 2004). The input and effort of women in Cassava production is the major reason for the improvement in the production of the crop in the country. The hard labour of women which contributed to the general acceptability of the crop in the area of domestic uses and industrialization usage are the main reason of our rating in the world as the one of the major producer of the crop in the world. Against this background, the study ascertained adoption of improved cassava varieties by the women farmers in Akinyele local Government of Oyo State.

## II. RESULTS AND DISCUSSION

### Socio-Economic Characteristics of Respondents

The findings revealed that 10.9% of the respondents are less than 30 years and above 60 years respectively. 29.3% of the respondents falls between the age of 31-40 years and 26.1% between 41-50 years and followed by 22.7% of respondents between 51-60- years. This implies that the probability of women participating in farm work depreciates with age. Table 1, further shows that majority of the respondents were married (88%) while just 6.5% were single. This shows that majority are mature which confer responsibility. This is in line with Pratt (2004) finding who reported that married people tend to be responsible for the needs of their family at all times. It was further revealed that respondents with primary school certificate (42.4%)

were much involved in cassava farming from the result obtained. 28.3% of them have no formal education while 7.6% added Adult literary school. Secondary or Modern school certificate recorded 12% while 9.8% of them had tertiary certificate. This implies that the level of education of the respondents can be attributed to lackadaisical attitude of the women to adoption of improved cassava varieties in the study area. Also, It was revealed that 62% of the respondents were using between 1-5 hectares of land for cassava activities, 8.7% of the respondents used between 10-15 hectares of the land while 12.0% of the respondents are using 15-20 hectares of the land for their farming activities. This implies that level of adoption will be low as a result of fewer people with large hectares of land, with small land these set of farmers will adopt innovations earlier.

It was also revealed that 34.8% of the respondents hired labourer to assist them of their farm while 25.0% used family as sources of labour. Most (38.0%) of respondents make use of family member combined with hired labourer on their farm. This implies that respondents practice hire and family labour in order to reduce their cost of input in order to maximize profit in Cassava planting.

Table 1: Socio-Economic Characteristics

Variable	Frequency	Percentage (%)
Age		
Less 30	10	10.9
31-40	27	29.3
41-50	21	26.1
51-60	24	22.8
Above 60	10	10.9
Total	92	100.0
Marital Status		
Single	6	6.5
Divorced	2	2.2
Married	81	88.0
Widow	3	3.3
Total	92	100.0
Educational Level		
No Formal Education	26	28.3
Adult Literary School	7	7.6
Primary School Certificate	39	42.4
Secondary School	11	12.0
Tertiary School	9	9.8

Total	92	100.0
Primary Occupation		
Farming	63	68.5
Petty Trading	22	23.9
Others	7	7.6
Total	92	100.0
Farm Size		
1-5	57	62.0
5-10	16	17.4
10-15	8	8.9
15-20	11	12.0
Total	92	100.0
Sources Of Labour		
Hired	32	34.8
Family	23	25.0
Hired And Family	35	38.0
Others	2	2.2
Total	92	100.0

Field Survey, 2017

From the Table 2, it was revealed that 35.9% of the respondent got their cuttings from relatives, 33.7% from market, and 9.8% of the respondents also got their cuttings from extension agent, while 20.7% of the respondent got their cuttings from research institutes. This implies that most (35.7%) of the respondent got their cuttings from relatives because they can easily approach them at any time. This is in line with Food and Agricultural study on rural area which stated that dependence people on resources of relatives on their farm is their way of life. (F.A.O, 1995). Table 2 also revealed that 18.5% of the farmers harvested their Cassava within 8 months, 22.8% of them Cassava within 9-12 months old, 15.2% of the farmers harvested their Cassava between 13-17 months old, 40.2% of the respondent harvested theirs within 18.22 months old while 3.3% of the farmers harvested their Cassava above months old. It can be denote that respondents are not into planting improved cassava varieties based on the outcome which are not encouraging. According to the Table 2, 30.4% of the respondents got their credit from relatives and friends, 12.0% of them got it from cooperatives while 29.3% of the respondents got their credit from personal savings, 27.2% of them got there from bank of personal saving this implies that most of the respondents finance their farm because they cannot afford to borrow. The result shows that 42.4% of the respondents got their fertilizer from extension agent, 45.7% of the respondents got theirs from Research Institute, and

7.6% of the respondents got their fertilizer from ADP service center, while 4.3% of the respondent got their fertilizer from farm's group. This implies that majority of the respondents got their fertilizer from Research Institute properly to ensure that fertilizers gotten are of good quality. Also, 55.4% of the respondents acquired their herbicides from extension agents, 23.9% got theirs from Research Institute and 7.6% also got their herbicides from ADP service center while 13.0% of the respondents got their herbicides from farm's group

Table 2: Sources of Input for Cassava Activities

Variable	Frequency	Percentage
Sources of Stock		
Friends/Relatives	33	35.9
Market	31	33.7
Extension Agent	9	9.8
Research Institute	19	20.7
Total	92	100.0
Sources Of Credit		
Relatives/Friends	28	30.4
Cooperatives	11	12.0
Personal Saving	27	29.3
Loan from bank	25	27.2
Bank loan and personnel savings	1	1.1
Total	92	100.0
Sources Of Fertilizer		
Extension Agent	39	42.4
Research Institute	42	45.7
ADP Service Center	7	7.6
Farm's Group	4	4.3
Total	92	100.0
Sources Of Herbicides		
Extension Agent	51	55.4
Research Institute	22	23.9
ADP Service Center	7	7.6
Farm's Group	12	13.0
Total	92	100.0
Sources Of Insecticides		
Extension Agent	35	38.0
Research Institute	13	14.1

ADP Service Center	20	21.7
Farm's Group	24	26.1
Total	92	100.0

Field Survey, 2017

Laggers	23	12.0
Total		92
100.0		

Source: field survey, 2017

### Level of Adoption by the Respondents

Table 3 revealed that majority (37.5%) of the respondents were late adopters. This implies that the majority of the respondents adopted improved varieties of cassava after outcome and feedback from early adopters. Laggers with 23% followed the majority, the laggers are the set of respondents who wait for a certain innovation to completely outdated. They adopted the improved varieties that are not been used by the majority in the study areas. It was observed from the Table that only 6.5% are innovators. This implies that they accounted for larger farm land and are ready to take risk at any time. Also from the study it was revealed that the innovators are the educated farmers in the study area.

Table 3: Level of Adoption

Level of Adoption Percentages	Frequency	
Innovators	6	6.5
Early majority	12	13.0
Early Adopters	17	18.5
Later Adopters	34	37.5

### Problems of Cassava Farmers in Adopting Improved Varieties .

The Table 4 shows the problems of cassava farmers in cultivating new improved Cassava varieties. From the Table 4 it is deduced that the respondents were indifference that new cassava varieties has extremely short live, 50% accept while 50 % reject. Also, it was accepted by majority (100%) that the roots deteriorate within hours of harvesting while majority 100% made it clear that information on improved cassava varieties are not been spread enough to the farmer. It was also revealed that 100% of the respondent accepts that there is insufficient land for cassava cultivation in commercial quantity. Also from the result of the analysis, 100.0% of the respondents accept that there is limited funding sources and epileptic power supply. 50.0% of the respondents accepts that there were no plans to absorb the excess quantity produced while 50.0% of the respondent reject. Respondent also encounter indebtedness to financial institution from which they obtained loans to engage in large scale Cassava farming 0.00% of the respondent face this problem while 100.0% of the respondent did not encounter this problem.

Table 4: Problems of cassava farmers

Variable	Accept	Reject
New Cassava varieties has its extremely short live, the root deteriorate 34-72hrs of harvest	46(50.0)	46(50.0)
The root deteriorate 34-72 hours of harvesting	92(100.0)	0(0.0)
Lack of information of current improved varieties	92(100.0)	0(0.0)
Insufficient land for Cassava cultivation in commercial quantity	92(100.0)	0(0.0)
There were no plans to absorb the excess quantity produced	46(50.0)	46(50.0)
Farmers were indebted to financial institutions form which they obtained loans to engage in large scale Cassava farming	0(0.00)	92(100)

Source: Field Survey, 2017

### Hypotheses Test

There is no significant relationship between some selected socio- economic characteristics and adoption of improved cassava varieties.

The test of relationship between selected personal characteristics of respondents and level of Adoption in Table reveals that household size ( $\chi^2=0.863$ ,  $p=0.040$ ) and

education had significant relationships with level of adoption. It implies that household size assist the respondents to get information on improved cassava varieties. Also, education helped the respondents to use acquired knowledge, skills and attitude to perform effectively in the cassava production.

Table 5: Chi-Square Test of Socio-Economic Characteristics and Level of Adoption

VARIABLE	X <sup>2</sup>	DF	PVALUE	DECISION
Gender	0.379	1	0.538	NS
Age	2.389	4	0.659	NS
Marital	5.842	3	0.120	NS
Household	0.863	2	0.040	S
Education	6.312	2	0.000	S
Secondary occupation	0.72	2	0.965	NS

Source: Field Survey, 2017

### III. CONCLUSION AND RECOMMENDATION

From the Foregoing, It can be deduced that cassava farming unlike other food crops are mainly activity of married women who are most in their active age. Most of the farmers were into small scale farming which made up to be late adopters of cassava varieties. The Adoption of Improved cassava varieties was influenced by lack of agricultural input, inadequate information on improved varieties and glut issues. Finally, education plays important role in adoption of improved cassava varieties. Majority of the educated farmers are into adoption of improved cassava varieties more than uneducated ones in the study area.

#### Recommendation

1. More women should be encouraged to get involved in cassava production
2. State and local Government should fully utilize the provisions of land use decree of 1978 for equitable allocation of land among progressive, for land – starved farmers.
3. Effective supply of agricultural inputs, such as cassava or cultivars, fertilizers, insecticides, through ADP at affordable prices, should be encouraged.

### REFERENCES

- [1] Akinwonmi A.S., and Andoh, F (2013) : Design of a Cassava Uprooting Device, *Research Journal of Applied Sciences, Engineering and Technology* 5(2): 411-420, 2013 ISSN: 2040-7459; E-ISSN: 2040-7467
- [2] Akoroda M.O. and Teri J.M. (2004); Food Security and Diversification in SADC Countries. Approach “A case study of Western Nigeria Cassava. Farmers” *Indian Journal of Agricultural Economics* 27 (2) 56-66.
- [3] Berrin, K., and Larco Museum. 1997. The Spirit of Ancient Peru: Treasures from the Museo Arqueológico Rafael Larco Herrera. New York: Thames and Hudson. ISBN 0500018022.
- [4] Food and Agricultural Organization of the United Nations (FAO) ((2005): "Post-harvest deterioration of cassava, a biotechnology perspective Plant Production and Protection Paper N. 130, FAO NRI, Rome, 1995.
- [5] FAO 1998: World Agriculture toward 2010 An FAO study edited by Nileo s Alexanda.
- [6] Pratt, A. (2004). Women's collective economic strategies and political transformation in rural South Africa. *Journal of Gender Planning and Culture*, vol.11(2), pp. 206-228
- [7] Stone, G. D. (2002). "Both Sides Now". *Current Anthropology* 43 (4): 611–630. doi:10.1086/341532.